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J 57017.P025

EXAMINER

DODSON, S

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN 15M1  
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ART UNIT PAPER NUMBER

1503

DATE MAILED: 03/29/93

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☐ Responsive to communication filed on \_\_\_\_\_ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), \_\_\_\_\_ days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- ☒ Notice of References Cited by Examiner, PTO-892.
- ☒ Notice re Patent Drawing, PTO-948.
- ☒ Notice of Art Cited by Applicant, PTO-1449.
- ☐ Notice of Informal Patent Application, Form PTO-152.
- ☐ Information on How to Effect Drawing Changes, PTO-1474.
- ☐ \_\_\_\_\_

Part II SUMMARY OF ACTION

1. ☒ Claims 1-23 are pending in the application.

Of the above, claims \_\_\_\_\_ are withdrawn from consideration.

2. ☐ Claims \_\_\_\_\_ have been cancelled.

3. ☐ Claims \_\_\_\_\_ are allowed.

4. ☒ Claims 1-23 are rejected.

5. ☐ Claims \_\_\_\_\_ are objected to.

6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed on \_\_\_\_\_, has been ☐ approved. ☐ disapproved (see explanation).

12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received  
☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_

13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

EXAMINER'S ACTION

15.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16.

Claim 1 is rejected under 35 U.S.C. § 102(b) as being anticipated by Bohlen et al. USP 4,591,540.

Bohlen discloses a method of printing or transferring a pattern into a radiation-sensitive layer or substrate, specifically two patterns or two images with edges in close proximity to one another. Bohlen further discloses that the two partial patterns or images being latently transferred respectively into radiation-sensitive emulsion layers or into a radiation-sensitive layer deposited on metal layers or on semiconductor substrates, respectively, are etched using the developed, radiation-sensitive layer as an etching mask, and thus the two patterns are projected successively. (Note column 5). Bohlen et al. discloses each and every aspect of claim 1 as claimed by the applicant in the instant case.

17.

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claims 1-23 are rejected under 35 U.S.C. § 103 as being unpatentable over Bohlen et al. USP 4,591,540 in view of Gilson USP 4,835,088.

Bohlen discloses a method of transferring, two images edge to edge in a radiation-sensitive layer or substrate which are in close proximity of each other. Bohlen further discloses that the photolithographic step of the disclosed process is obtained by an electron beam rather than ultraviolet rays. Bohlen discloses each and every aspect of the invention as claimed by the applicant with the exception of the radiation source being UV light and the specific numerical calculations of the distances between the two images being specified in numerical equations. Gilson discloses a process for transferring small images specifically applications to microlithography of the type used in etching patterns during the production of integrated circuits.

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Art Unit 1503

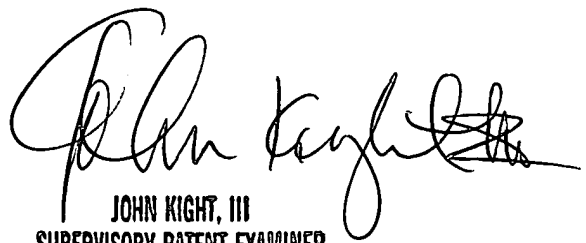
In column 1, line 42 in seq. Gilson further discloses that it is possible to reduce the wavelength by employing shorter wavelength photons, such as those associated with ultraviolet light or x-rays or by electron beams rather than attempt to reduce a large form image. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ ultraviolet light source as the radiation source in the photolithographic step of Bohlen to achieve the needed micron distances or shorter wavelengths to eliminate the diffraction problem as well as achieve the necessary claimed Rayleigh calculations as claimed by the applicant in the instant case in view of the teaching of Gilson that ultraviolet light exposure reduces or eliminates the diffraction problem.

18.

Any inquiry concerning this communication should be directed to Shelley A. Dodson at telephone number (703) 308-2351.

*SD*

Dodson:css  
March 25, 1993

  
JOHN KIGHT, III  
SUPERVISORY PATENT EXAMINER  
ART UNIT 153